California GARDEN

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HORTICULTURAL CALENDAR

May Weekends — **SAN DIEGO NATURAL HISTORY MUSEUM Canyoneers Outdoor Program**
Free guided nature walks. Information/brochure: 232-3821.

May 1 — *** SAN DIEGO FLORAL ASSOCIATION May Day Basket Class with Kathy Walsh**
Casa del Prado, Room 103, Balboa Park. All materials supplied. $10.50 members, $11.50 non-members. Call Marie Walsh for reservations: 298-5812.

May 2 — **THE HUNTINGTION First Thursday Garden Talk**
1151 Oxford Road, San Marino. Tips for attractive landscapes with herbs. Plant sale. 2:30 p.m. Free. Call 818/405-2147.

May 4 — **FULLERTON ARBORETUM Guided Tour**
NE Corner of Cal State University, Yorba Linda Blvd. at Associated Road, just west of 57 freeway. Renowned botanist Mildred Mathias will lead a new UCLA Extension one-day guided walk in the garden. 9 a.m.-4 p.m. Fee: $75. Call 213/825-7093.

May 4 — **GROSSMONT GARDEN CLUB Plant Sale**
In front of Vons, 8011 University Avenue, La Mesa. 8:30 a.m. Call 463-2768.

May 4 — **OHARA SCHOOL OF IKEBANA, LA JOLLA CHAPTER 10th Anniversary Celebration**
La Jolla Marriott Hotel, 4240 La Jolla Village Drive. Japanese flower arranging demonstration & luncheon. 11 a.m. $35. Reservations: 456-0559 or 487-9465.

May 4 & 5 — **HEARTLAND AFRICAN VIOLET SOCIETY 10th Annual Show**
Casa del Prado, Majorca Room, Balboa Park. Sat.: 1-5 p.m.; Sun.: 11-5 p.m. Free.

May 4 & 5 — **VISTA GARDEN CLUB 58th Annual Standard Flower Show & Plant Sale**
Brengle Terrace Park Sr. Center; 1200 Vale Terrace, Vista. Sat.: 1:30-5 p.m.; Sun.: 10-4:30 p.m. Free. Call 758-0234.

May 5 — **LOS ANGELES STATE AND COUNTY ARBORETUM Baldwin Bonanza**
301 North Baldwin Avenue, Arcadia. Annual plant sale proceeds support the Arboretum. 9-4 p.m. Arboretum admission: $3. Call 818/446-8251.

May 11 — **SAN DIEGO COUNTY BRANCH, NATIONAL FUCHSIA SOCIETY Annual Sale**
1731 South Horne Street, Oceanside. 9-12 noon.

May 11-19 — **JULIAN WOMAN'S CLUB 65th Annual Wildflower Show**
Julian Town Hall, Main St. & Washington St., Julian. Art Show runs concurrently. Pioneer Museum will be open. Group luncheons for 35-50 can be arranged (765-0297). Daily 9-5 p.m. Free. Call 765-1276 or 765-1466.

May 12 — **SAN DIEGO EPIPHYLLUM SOCIETY 21st Annual Mother's Day Show**
Casa del Prado, Majorca Room, Balboa Park. 11-5 p.m. Free.

May 14 & 15 — **SANTA BARBARA BOTANIC GARDEN Lecture & Estate Gardens Tour**
1212 Mission Canyon Road, Santa Barbara. Uncommon opportunity to visit Lotusland (40 acre estate of Mme. Ganna Walska) & Casa del Herrero (Bass Estate), a garden masterpiece of Moorish & European design. Tues.: 7:30-9 p.m.; Wed.: 10:15-4 p.m. $25. Own vehicle. Call 805/563-2521.

May 18 & 19 — **SOUTH COAST BOTANIC GARDEN Fiesta del Flores Plant Sale**
26300 Crenshaw Boulevard, Palos Verdes Peninsula. Annual sale benefits Garden. Come early for best selection. 9-4 p.m. Garden admission: $3. Call 213/544-1948.

May 18 & 19 — **SAN DIEGO GERANIUM SOCIETY 19th Annual Show**
Casa del Prado, Majorca Room, Balboa Park. Sat.: 1-5 p.m.; Sun.: 10-5 p.m. Free.

May 19 — **THE HUNTINGTON 17th Annual Benefit Plant Sale**
1151 Oxford Road, San Marino. Wide assortment of plants includes ones hard to find. 10-4:30 p.m. Free. Call 818/405-2282.

May 19-28 — *** SAN DIEGO FLORAL ASSOCIATION Chelsea Flower Show Tour**
Escorted tour of England and Scotland including members only preview day of Chelsea Flower Show. Reservations and information call: 232-5762.

(Continued on page 90)

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VOLUME 82 NUMBER 3
MAY-JUNE 1991

66 Horticultural Calendar . . . . . Mary Jordan
68 Common Geranium . . . . . Carol Roller
69 Caltrans . . . . . Staff Edited
70 Essential Elements . . . . . Betty Newton
71 Crassula . . . . . Robert Horwitz
72 Square Foot Gardening . . . . . John Jacobelli
73 Drought Resistance . . . . . Staff Edited
74 The Beet . . . . . National Garden Bureau
77 To Talk or Not to Talk . . . . . Mort Brigadier
78 Saving Water in Home Orchards . . . . . James Beutel
80 Nine Ways to Save Water . . . . . Staff Edited
81 Bus Trips . . . . . Helen Gagliardi
82 Year of the Oaks . . . . . Staff Edited
82 Gardener's Checklist . . . . . Staff Edited
83 Riddle of the White-Lined Sphinx . . . . . Gloria Glasser
85 Book Reviews . . . . . Mary Lou Orphey
87 Now is the Time . . . . . Penny Bunker
91 Affiliates . . . . . Nancy Cottingham

ECHINOCACTUS GRUSONII **(Golden barrel cactus) - Mexico. A slow-growing globular plant which may reach a diameter of two feet at maturity. Young plants appear to have prominent tubercles which fuse as the plant matures, forming ribs covered with golden spines. Young specimens may be grown indoors in bright sun with average soil and watering. A cool, dry winter rest period is essential. Only mature plants bear the yellow flowers. - Dover Books.**

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FLOWER SHOWS: Show chairman contact *California Garden*, 232-5762 if you want the magazine sold at your next show.

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THE MOST COMMON GERANIUM

by Carol Roller

THE FIRST KNOWN WRITTEN information about a geranium is said to have been recorded by Dioscorides, a physician with the Roman legions at the time of nero's reign (AD54-68). In those early days, most medicine was of plant origin, the doctor was also a botanist. We will never know the original native range of *Geranium robertianum,* but the plant was probably transported throughout the Roman Empire because it was used for a multitude of ailments. When the conquerors were gone, the plant remained because it was an undemanding grower which adapts to many situations.

Herbals from the Middle Ages indicate that *G. robertianum* had naturalized over a vast area of northern Africa, Europe, Asia and an assortment of inhabited islands. It has been given many common names including Wake Robin, Red Robin, Red Shanks and Rockweed. The most common name is Herb Robert. It was probably found in every physic garden and dooryard planting. In **BOTANICAL READY REFERENCE (1972)** J.M. McNickells says: *G. robertianum* is useful as a tonic, an astringent, a control for fever and a curative for kidney complaints. He tells us to use young leaves and to discard coarse stems. He does not give a recipe for preparing the palliative. Does one drink it or rub it on the afflicted areas? I haven't a clue.

Herb Robert is fairly common in Southern California, although few people recognize it as a geranium or cranesbill. It is a small plant, up to eight inches tall, if well watered and sheltered from the sun. It has a rosette of leaves crowded into an abbreviated stem. Each leaf consists of three deeply divided segments which are divided again into three or five sections. The stems and undersides of the leaves may be reddish.

The entire plant is covered with long, glistening hairs. it resembles a fern and can look very attractive. Unfortunately it is foul smelling. In drier, brighter locations it is smaller, paler and less lush, but still malodorous.

Flowers may appear at any time of the year, but the pairs or trios of symmetrical half-inch rose pink flowers are not very showy. Herb Robert and the other weedy, annual geraniums are self-fertile. Each floret can produce five seeds in individual compartments at the base of the central column (rostrum). The rostrum is the cranesbill structure which is characteristic of all plants of the Geranium Family. When mature, the seeds of Herb Robert are catapulted away from the mother plant. The slightest amount of moisture produces a new crop.

The genus *Geranium* consists of several hundred species from temperate climates around the world. Some are lovely, blue flowered perennials from cold winter-cool summer places. In general these do poorly in dry Southern California. The small flowered annual species are more numerous and include several which are native to Northern California.

Monsonia and *Sarcocaulan* are Southern Africa generawhich are botanically similar to *Geranium*. They also have symmetrical, five-petaled florets. The other two genera of the Geranium Family are *Erodium* and *Pelargonium*, both of which have irregular (asymmetrical or zygomorphic) florets with petals of two different kinds. *Pelargonium* species are seldom seen in cultivation. The familiar zonals, regals (Martha Washingtons), ivy leaved and scenteds are artificial categories created by hybridizing some of the species. It is unfortunate that many people are uninformed about the real identity of these hybrids and mistakenly call these pelargoniums geraniums.

The geranium, herb Robert, is sometimes recommended as a ground cover under trees or shrubs. This can be very satisfactory. In a more structured setting, Herb Robert can be a problem. When I moved in 1986, seeds or seedlings hitchhiked along. The seedlings often appear in pots among other plants and have to pulled out. They also come up under the greenhouse benches. Although they are pleasant to look at, they harbor whitefly and if untended, can be a source of recurring infestations.

Herb Robert has lived with mankind for at least twenty centuries. It sows its own seeds. One hardly needs to cultivate it; it grows itself. Its medicinal properties have benefitted the human race. Perhaps we should hold our noses and get to know the plant better. I have been feeling a little run down; maybe I should look for the medicinal recipe.

CAROL ROLLER is a garden writer and a regular contributor to **California Garden** magazine's Now Is The Time Feature.

CALTRANS WATER CONSERVATION

July 1990

OVERALL GOALS:

- Make the most efficient use of landscape irrigation through a variety of water management practices.
- Protect the State's taxpayers' investment in the highway landscape (replacement value - $38 million in San Diego County and $150 - $200 million statewide).
- Provide drought-tolerant highway landscaping that not only looks good, but also gives erosion control and improves motorist safety.

The California Department of Transportation (Caltrans) is the largest landscape user of water in the state. This year it will use about 4,800 acre-feet of water on 2,500 acres of highway landscaping in San Diego County. In the past three years, Caltrans has reduced its highway landscape water usage in the county despite adding additional acreage. Caltrans will continue the effort without jeopardizing the state's investment and aesthetics of the terrain, while maintaining motorist safety through the use of reclaimed water, drought-tolerant plants, drip and micro spray irrigation and mulch.

Caltrans is committed to the reclaimed water movement. Its water conservation measures began in the mid-1960's as a way of reducing operating costs, but it has been proven to be useful in reducing potable water usage as well. Caltrans has two reclaimed water projects in San Diego County totaling nearly 150 acres. The first is the aquaculture plant in Mission Valley, which uses the city's reclaimed water to irrigate nearly 50 acres on Interstate 15 from I-8 to north of Aero Drive. The second is located in Oceanside and Carlsbad using Fallbrook Sanitary District water. It waters about 108 acres along I-5 from the Camp Del Mar Overcrossing in Oceanside south to Buena Vista Creek Bridge in Carlsbad. Each reclamation project saves taxpayers from $100 - $300 per acre foot when compared to potable water supplies. Nutrients in the reclaimed water also greatly reduce the cost for fertilizers.

San Diego County's semi-arid climate and its escalating water demands due to a growing population has made the use of drought-tolerant plants an important part of the highway landscaping program. Drought-tolerant plants are able to survive with very little water other than available rainfall. These plants are able to survive these conditions because of a deep root system which taps water stored deep underground. Because of this, these plants initially require intense watering to establish the root system, but the long-term water savings is significant. Some of the drought-tolerant trees found along San Diego County highways include Torrey pines, oaks and eucalyptus. Some of the shrubs include aloes, oleander and lemonade berry, while the groundcovers include acacia redolens and lantana.

Upgrades from the traditional hand-operated irrigation systems to the high-tech, computer-controlled systems allow Caltrans to be more time specific with its landscape watering, and in turn save water. The manually-operated systems must be physically turned on by highway workers, and must be done during the daylight hours for their safety. These systems are being replaced by the automatic systems as funds become available. There are more than 2,000 automatic sprinkler controllers in San Diego County. The automatic system makes the most efficient use of landscape water when it is combined with drip and micro-spray heads. Drip and micro-spray heads focus drops of water or a fine spray on a specific plant, reducing the waste of water on the surrounding area. The use of mulch over the base of the plant to retain this moisture is another water-conserving step.

Caltrans conducts the majority of its landscape irrigation between midnight and 6 am. However, in some situations - due to water availability, water pressure and plant needs - the irrigation carries over into the daylight hours. The inspection of an irrigation system for leaks must be done during the day and requires that the water be turned on. Also, in some areas, problems with transients prevent watering at night. Transients remove or redirect sprinklers, break water lines and damage valves, which must be tested and repaired during the day.

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ROLE OF ESSENTIAL ELEMENTS

by Betty Newton

Adapted from Botany, Holt, Rhinehart

Tobacco (*Nicotiana tabacum*) plants in culture solutions, showing the effect of deficiency of various elements. 1: no nitrogen added. 2: no phosphorus added. 3: no potassium added. 4: no calcium added. 5: no magnesium added. 7: no boron added. 8: no sulfur added. 9: no manganese added. 10: no iron added. 6: all the above elements added.

THE SOIL IS THE SITE of slow transformations vital to green plants. Many of the older ideas regarding the action of essential elements can be dismissed as oversimplifications. Among these are the generalizations that nitrogen makes leaf growth; that phosphorous makes grain; that potassium is especially important for root crops; and that nitrogen delays maturity while phosphorous hastens it.

Nitrogen phosphorous and potassium are required by all living cells. Either nitrogen or phosphorous, in balanced supply, can hasten growth and maturity of grain, vegetable or other crops. An oversupply of nitrogen alone, however, may delay maturity by causing a relative deficiency of phosphorous.

Because the essential elements may have specific functions within the plant, it might be assumed that a deficiency of a particular element would lead to a specific symptom. Any nutrient deficiency will result in reduced plant growth. A trained observer, familiar with a particular plant in a particular environment, can draw many conclusions from mineral-deficiency symptoms, but there are no simple and generally applicable rules that can be followed.

In spite of a vast amount of research, the specific function of many of the essential elements is still imperfectly understood. The roles of carbon, hydrogen and oxygen (from air and water) are clear. As building units of sugars, cellulose, protein and other plant compounds, these elements form on an average about 94 percent of the dry weight of plants.

1) Nitrogen is an essential component of the amino acids of which proteins are formed and of the nitrogen bases present in the nucleic acids and in related compounds such as ATP.

2) Phosphorous is present in nucleic acids and functions in the transfer of usable energy. This element is also present in the lipid combinations that are thought to be important in the structure and permeability of protoplast, the entire contents of a cell.

3) Sulphur is present in three amino acids and functions in essential respiratory and other enzymes.

So far, we can say that carbon, hydrogen and oxygen are basic building elements, and that nitrogen, phosphorous and sulphur are concerned in the formation and functioning of protoplasm.

The role of the three remaining macronutrient elements, calcium, magnesium and potassium is not so clear. Calcium is present in the cell wall and magnesium in the chlorophyll molecule, whereas potassium is not known to occur in any specific plant compound. These three base-forming elements seem to have in common the general properties of stabilizing the structure of the protoplasm and of aiding in the action of the enzymes.

Definite roles in the functioning of specific enzymes can be assigned to the micronutrient metals iron, manganese, copper, zinc and molybdenum. It is assumed that boron and chlorine function similarly.

BETTY NEWTON is a garden writer and teaches at Grossmont Adult School.

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CRASSULA - THE JADE PLANT

by Robert D. Horwitz

THERE IS A SITUATIONAL RELATIONSHIP between the Jade Plant and the Geranium in that they both grow almost like weeds in Southern California. In the rest of the country where the winters are cold, they are coddled and babied as indoor plants. They can be grown indoors here, and very attractively. To add to their value, they make wonderful plants for your patio or where you have very limited space. They take very little care or water. In our days of water shortage, they are most attractive from that point of view. They are not particular about soil requirements and will withstand bound root conditions very well.

Crassula bloom outdoors in early winter. Unless the light level is very high indoors, they will not bloom. By themselves, the blooms are insignificant, being a white to pink color, but looking at the whole plant in bloom, you see a mass of flowers contrasting nicely with the dark color of the green leaves.

The leaves are fleshy ad round shaped, growing in clusters of eight to twelve leaves. Mature leaves are about an inch across. As they get older, they get turn a dark green. Old leaves turn brown and give there moisture to the plant. Then they wrinkle, dry up and fall from the stems. The stems are grayish brown in color and very fleshy, making an attractive contrast to the color of the leaves and blossoms.

The Jade can be propagated easily by breaking off a stem at a node where leaves used to reside. Letting the break heal for a few days and then putting the stem in potting soil composed of garden loam and sand. Keep the soil damp until rooting takes place. If stems are broken off by wind or other means, it is likely that the fallen stem will take root. The Jade grows slowly under our drought conditions, although the trunks can get to be quite large in diameter. The whole plant can be considered brittle because stems and trunks will break off easily.

In the summer, under lots of sunlight, the leaves will start to turn a rust color at their tips. This is quite appealing and makes a good contrast to the dark green of the other part of the leaves.

There are several varieties of the Jade, the two most common being: 1) the Argenta which has rounded leaves that are a middle green in color and about an inch or two across. This is the most common one found in most gardens and in the indoors. 2) *Lycopodioides* has smaller leaves which are more widely spaced. This Jade plant makes a good candidate for bonsai training as it has an innate bonsai character. Other varieties include the Aborescens which has a grey-brown red tinged leaf structure combined with whitish dots. The Cultrata is interesting because the leaves grow around the stem, twisting in opposite directions, hence its name, The Propeller Plant.

Consider the Jade as a low maintenance plant with lots of character that will do well indoors or out, in a large or small garden.

ROBERT D. HORWITZ is a retired aerospace engineer, a gardener, and a frequent contributor to **CALIFORNIA GARDEN** magazine.

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SQUARE FOOT GARDENING IS CONSERVATION

by John Jacobelli

THE FOLLOWING ARTICLE was written by Mr. Jacobelli in November 1989 and was awarded the C-4 Josephine Read Conservation Education Award.

Conservation, to the average home gardener, is a project most often left to the governmental agencies, for it implies large scale and costly projects too vast to tackle. The goal of this article is to project a simple idea that every gardener can utilize. If every gardener were to employ this idea, the result would be an overwhelming aid to water conservation.

Conservation is dictionary-defined, in part, as "the preservation of natural resources for economical use." Square foot gardening fits right into this definition. Putting it into proper perspective, it is the future for home gardeners in that it conserves: SPACE, WATER, TIME.

As the size of home building lots get smaller and smaller due to the price of land and the developers building more houses on smaller lots, there is less space for gardening. The answer is Square Foot gardening. Not only is this method ideal for vegetables, one can grow cut flowers for the home, flower arrangements, etc. Consider this method as being conservation of space. The average square foot garden for a family of four, containing six 4' x 4' blocks, with paths in between measuring 10' x 16' (160 square feet), will produce the same amount of food as a conventional row garden of 20' x 40' (800 square feet), five times as large.

We are being made more and more aware of the water shortage in Southern California. This being our most precious natural resource, conservation is a MUST if we are to have adequate water so vital to gardening. In square foot gardening, the ideal way to water is by hand, i.e. using a measured container and putting the water each particular plant needs at the root where it is needed. By doing this, you are conserving water since only the soil in which the plant is growing receives the water. You are not watering soil which is unproductive or nurturing weeds. This truly is water conservation.

Since gardening time must compete with other leisure time activities and this being a very mobile society, conserving time is also important. It takes a mere twenty minutes to water a six block 4' x 4' garden. In addition, consider this: Once you have prepared the soil in the squares - spaded, rototilled, etc., and the soil is soft and friable, you will never have to use a spade or rototiller on that soil again. Imagine how much time and labor that saves. Surely time is a resource that must be used wisely.

Considering that square foot gardening requires only a minimum of SPACE, WATER and TIME, it is CONSERVATION in every sense of the word.

JOHN JACOBELLI is a Master Gardener and an avid proponent and lecturer on Square Foot gardening.

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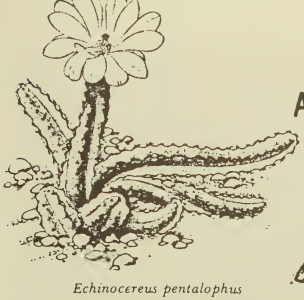

Echinocereus pentalophus

SEVEN WAYS TO MAKE YOUR TREES AND SHRUBS MORE DROUGHT RESISTANT

1. MULCH ROOT AREA. All landscape plants will benefit from a one to two-inch protective layer of mulch on the soil surface above the root area. This organic material will moderate soil temperatures and retard moisture loss between waterings.

2. INSTALL DRIP IRRIGATION. The low flow rate of a drip irrigation system allows the water to soak in slowly to the plant roots. The deep penetration of drip irrigation water encourages deep, strong root systems and reduces water loss from the soil due to evaporation.

3. DO NOT OVERWATER! Most established landscape shrubs need infrequent watering. Check the soil moisture level at a depth of four to six inches. The plant should not be wilted but the soil should be dry to the touch and crumble in the hand before watering.

4. BUILD WATERING BASINS. A basin around the root area of plants will aid in the deep watering of new or established landscape shrubs. Slowly fill the basin with water to allow the soil to accept the water without runoff. larger plants may require more than one fill-up per watering cycle.

5. WATER WHEN IT IS "COOL." Water trees and shrubs during the cooler parts of the evenings or early morning. Watering when the temperature is cooler reduces water loss from evaporation. Morning watering lessens the chance of mildew.

6. CULTIVATE FOR WATER PENETRATION. Cultivate lightly under plants or use a liquid soils penetrant to hasten water penetration to the roots. Reduced evaporation and soil erosion will take place if water soaks in too quickly.

7. USE A ROOT FEEDER. A root feeder will give large shrubs and trees a very deep watering without having to saturate the surface soil. The use of a root feeder can cut the watering frequency of some large trees to only three times a year.

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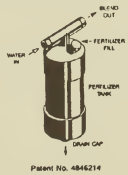

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THE BEET

BEETS ARE SIMILAR TO PEOPLE with eccentric behavior. They both evoke strong feelings of love or hate. People either passionately loved beets or would not eat them. It is unusual that a round red root creates such diverse emotions. Easy to grow from seed, beet roots have a subtle, earthy flavor when cooked fresh from the garden. Beet foliage is a gourmet delight commonly called beet greens. Beet greens contain healthy portions of iron, potassium and Vitamin A. Beets easily fit into small space gardens for nutritious greens and fresh roots. Adaptable, tasty beets are a vegetable for novice and experienced gardeners.

The ancestor of today's rosy beet was a tough, white root grown for its leaves. The ancients ground the root for use as an ingredient in bone salve. Lucius Apuleius, a Roman philosopher and satirist of the second century A.D. wrote that beets were a remedy for snakebite. Although the beet roots were not considered edible, Piny the Elder advised that the non-fatal but socially serious problem of garlic breath could be lessened by eating a roasted beet. The Romans make only a few references to the beet's medical prowess, but we are indebted to them for naming this bulbous root "beta." This inediblewhite beet still grows wild along the Mediterranean sea coast.

By the late 16th century beets were under cultivation in Germany and valued for the quality of their roots as well as their leaves. Somehow, between the second and 16th centuries, this tough white root became an edible red one. The first description of a red beet comes from the English naturalist, John Gerard, who grew both white and red beets. He acknowledged the Southern European heritage of the red beet by referring to it as the "Roman Beet...surnamed Sicilia." His encyclopedia of plants, "The Herbal," informs the reader that beet greens "boyled and eaten with oyle, vinegar and pepper is a most excellent and delicate sallad." As for the "red and beautiful root," he advises that it is wholesome but relegates cooking instructions to "the curious and cunning cooke...who will make many and divers dishes, both faire and good."

North American settlers had to contend with colder, longer winters than in Europe. Leafy salad greens that matured quickly were prized. Thus beets were still grown for their vitamin rich foliage. Farmers raised crops from seeds brought with them on their voyage tothe New World or received from contacts in Europe. Early in the 19th century few varieties of beets were available to North Americans.

Mangel-wurzel, a large, coarse beet from Germany was sent to Martha Washington to grow in her plantation gardens. This was the forerunner of the mangel beet used today for livestock feed. By 1821, William Cobbett wrote that beets were as common in America as carrots were in England. When beets became more popular, ingenious new uses were found for them. Ladies used the juice from a cut beet as a stain to rouge their cheeks. Gradually new varieties were introduced, including the yellow beet developed in the Languedoc region of France. By the 1880's a dozen beet varieties, including white, yellow and red, were being grown in this country.

Beets belong to the *Chenopodaeceae* or Goosefoot family, so-called because some species have leaves that resemble the webbed shape of a goose foot. The Goosefoot family includes spinach and hundreds of other species, mostly annual and perennial herbs, all having leaves without hairs.

In addition to the common garden beet, *Beta vulgaris* includes the sugar beet grown commercially as a source of sugar and the mangelbeet, grown primarily for stock feed. A close relative, *Beta vulgaris cicla* is the Swiss Chard. Swiss Chard lacks the thick fleshy root of the beet but has tender leaves, similar to spinach. The garden beet is characterized by its globe-shaped or tapering root and reddish-green edible leaves.

Most gardeners are familiar with the lacy flowers of a carrot gone to seed, but few have seen a beet in flower. Beet is a biennial plant. The first year of growth is devoted to the manufacture and storage of nutrients. Harvesting the tender root is the goal of

growing the beet so there is no reason for us to let the plant grow on for another year, the root becomes woody as the plant flowers and produces seed. Flower lovers aren't missing much. Beets can be classified according to their shape, use or color. There are two main shapes of beets. Most beets are globular, a shape ranging from perfectly round or top-shaped to somewhat oval. The second type is cylindrical, having a long tapered shape, somewhat like a thick carrot. In recent years the globe types have been down-sized to a mini-beet, ready for harvesting at ½ inches. The gourmet "babies" are attractive when served whole.

There are three basic ways to use the beet root; fresh, preserved such as canned or pickled, or for long term storage. There are beet cultivars bred for the fine eating quality of their leaves. Beets are related to Swiss Chard and spinach, so its no wonder that their foliage is an iron rich, tasty green.

In choosing a site for beets, keep in mind that although they tolerate partial shade, they will perform best in full sun.

Beets are not a cool-weather crop like spinach and broccoli. However roots will have a deeper red color, more uniform size and sweeter taste when grown under cool temperatures. (60-65 degrees F). In many areas ofthe country this means a beet bonanza for vegetable lovers, as both spring and fall crops can be planted. If the weather becomes hot for a prolonged time, beets will have a lower sugar content and their red color may be ringed with white. Although they are tolerant to cold, plants can be damaged by frost.

In all areas, seeds may be sown as soon as the ground can be worked in spring. In southern areas, late winter is the time to sow for a spring crop and again in late summer for a fall harvest. In frost free areas, take advantage of the cool fall and winter growing season and sow from late September through February.

Don't wait until it's too late!

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Beets will thrive in most well prepared soils. The ideal soil is a rich sandy loam. Heavy clay soil can stunt best growth. Quality soil can be attained by first spading the area to a depth of eight inches. If the soil is hard or clay, it is advisable for the gardener to use a raised bed. By elevating the growing area 4 to 6 inches or more, organic matter can be added to improve aeration and drainage.

Working in 2 inches of manure will enrich the soil. manure must first be composted. Fresh manure may burn seeds and seedlings if it is applied directly to the soil. Dried manure can be purchased and is safe to use immediately.

The beet seed looks like a shrunken, withered pea. It is not a seed at all, but a dried fruit which may contain one to four or more seeds. Sow seed ½ to 1 inch deep and 1 inch apart. Allow at least 12 to 18 inches between rows for unimpeded foliage and root development. Cover the seed with a soilless mix or a combination of sphagnum peat moss and sand. This fine covering will make it easier for the seedling to break through. Beets will germinate in about 6 days if the soil is 68 degrees F. When planting very early in the spring, thinly scatter some radish or lettuce seeds along the row. These quick-to-sprout vegetables are handy markers for identifying the placement of beet seed. As the dried seed cluster opens, most of its seeds will sprout, resulting in clumps of seedlings. These groups need to be thinned when true leaves appear. Allow 2 to 3 inches between seedlings. If large beets are desired, thin again about a month later, leaving 6 inches between plants. Don't be timid about thinning; a crowded stand of beets yields a crop of small twisted roots. The thinnings do not have to go to waste because young greens make a delicious, tender spring salad.

A steady and adequate supply of water during germination and throughout the growing period is crucial for a healthy crop. Insufficient water can result in stunted greens and cracked or toughed roots. When the top 2 inches of soil are dry, it's time to water. A 2 to 3 inch layer of peat or other organic mulch will help retain water as well as deter weeds. Beets do not need heavy fertilization; a humus rich soil is better than frequent applications of fertilizer. Weeding is not labor intensive for beets. The plant's broad leaf growth will shade out most intruders.

Gardeners frustrated by the lack of space to raise vegetables will welcome the compact beet. One square yard of fertile soil can produce up to 100 beets. Even a sunny patio or balcony can be turned into a vegetable garden with the use of containers. Beets can be grown along with shallow rooted annuals for a decorative touch. The dark green leaves form a cool backdrop for

Epithelantha micromeris

bright yellow nasturtiums or blue pansies easily grown from seed.

Beets are not bothered by many pests or diseases. Prevention is the best line of defense in dealing with hostile invaders. Remove weeds, debris and infected leaves; any diseased material should not be added to the compost heap. Rotating the beet crop each year with a non-root crop will prevent any disease causing organisms from gaining a stronghold.

If beets are grown for the sake of their greens, harvest the whole plant when the leaves are about 6 inches tall. Beet roots do not have to reach a certain size to be edible. They may be lifted when they are between ½ to 3 inches. At this stage the beets are tender and sweet; very large beets tend to become tough and woody. The key to storing beets for an extended period is to keep them in a cool, moist environment. They may be placed, not touching each other, in a box of sand or dry sphagnum peat moss. Another method of storage is to place the beets in a paper bag with a handful of sawdust. At very cool temperatures of 32 to 35 degrees F. and a humidity level of 95%, beets will keep for months. Beets may be stored right in the ground if there is no danger of a freeze. All freshly harvested beets will keep in the refrigerator for a few weeks.

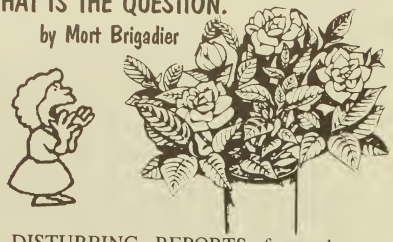
Beets rate high in nutrition and low in calories. The sugar content gives beets their naturally sweet taste, but a cup contains only 58 calories. The same amount gives us as much potassium as a potato. Beet greens score even higher in nutritional value. Consider a typical fast food lunch compared to beet greens. A cup of cooked beet greens has more iron than a hamburger patty, more potassium than a serving of French fries and 14 times the Vitamin A of a lettuce salad.

The easy to grow beet is also easy to prepare. Beet greens may be boiled or steamed. When cooking the beet root, leave the skin on and an inch of leaf stem so that less of the red pigment will bleed out. After cooking, cool and remove the skin before serving. Baked, steamed or boiled, beets need only a touch of butter and splash of lemon to bring out their sweetness. Cooled and dressed with a tangy vinaigrette sauce, beets make a colorful addition to green salads. To preserve the bounty, can or pickle cooked, sliced beets.

NATIONAL GARDEN BUREAU written by Diane Windiscch and edited by staff.

TO TALK, OR NOT TO TALK, TO YOUR PLANTS! THAT IS THE QUESTION.

by Mort Brigadier



THERE ARE DISTURBING REPORTS from the scientific community that global warming may be slowly but inexorably increasing the levels of carbon dioxide in the atmosphere.

We know that carbon dioxide is absorbed by plants aaand transformed through photosynthesis into oxygen for man to breathe.

Each adult person breathes an average of 123 gallons of carbon dioxide into the atmosphere each day. (persons who exercise breathe a little more; smaller people a little less).

Thus it is that plants provide food and oxygen for man and the animals; they, in turn support the existence of plants by exhaling CO_2 into the atmosphere. This is good. It makes the kingdoms mutually dependent upon each other. It also gives backyard gardeners ample excuse, as it has since the beginnings, to talk to their plants.

But, scientists now claim that global warming may be releasing too much carbon dioxide into the atmosphere. Many plants are reacting with increased (and potentially disruptive) growth patterns. Some agronomists suggest that some plants will have lower nutritional values, that when this over-active plant material decomposes it may change the structure and texture of the soil itself, and that with new flowering patterns, birds and insects may fail to pollinate.

Based on these findings, we must ask: Is it still safe to talk to the plants? Or, should home gardeners try to protect the environment by saving their breath?

Those gardeners who believe that increased levels of carbon dioxide are harmful, are advised to stop talking to their plants, immediately.

MORT BRIGADIER is a new contributor to California Garden Magazine.

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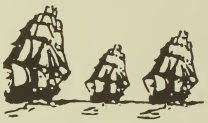

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SAVING WATER IN HOME ORCHARDS

by James Beutel

FULL-SIZED FRUIT AND NUT trees require large quantities of water to maintain themselves, size their fruit, and grow new shoots and flower buds to bear succeeding crops. On an average summer day, a bearing tree may transpire from 40 to 60 gallons of water. On a very hot day a large tree may use more than 100 gallons, if that much is available in the soil.

However, the amount of water usage changes with climate. In cool coastal areas, trees use the equivalent of 18 inches of rainfall during the growing season - spring and summer. In the hot Central Valley, fruit and nut trees transpire about 36 inches of water in a season. About two-thirds of that total is used during the three months of June, July and August.

Fruit and nut trees require these amounts of rainfall or irrigation water to grow normally and to produce good crops of well-sized fruits or nuts. In a drought, it is possible to keep trees alive and moderately healthy with as much as one-third less water. However, size and quality of the crop will be sacrificed.

Crucial Periods

To produce good yields, deciduous fruit and nut trees need at least some available soil moisture continuously from bloom until harvest. After harvest - in August, September, and later in the fall - these trees can survive on a minimum of soil moisture without tree injury or reduction of the following year's crop.

Evergreen trees such as citrus need soil moisture during both summer and fall to maintain leaves and fruit size. Also, normal soil moisture in the spring is necessary for fruit set in citrus.

Grapes need ample soil moisture when the canes start growth in April, and during the early summer to grow canes and leaves and to set fruit. Withholding water during late summer and fall will not hurt the vines and will increase sugar in the grapes.

Regardless of irrigation schedules, it's very important to start the growing season with moist soil throughout the root zone. In years with less than 10 or 12 inches of winter rainfall, it usually is necessary to irrigate fruit trees from 2 to 5 weeks before they bloom to start good root growth.

A second irrigation is usually needed in late May. During June, July and August, a reasonable schedule would be to irrigate sandy soil every two or three weeks, and to irrigate heavier loams or clay loams every three

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or four weeks. If the weather is unusually cool, intervals can be longer.

How to Apply Water

How can the family orchardist irrigate fruit and nut trees adequately and still conserve water? Often much water is wasted by surface runoff during irrigation. Also, weeds, ground covers and grass may use water that trees need. To conserve water:

- Prevent surface runoff while irrigating.
- Eliminate weeds or other competing plant growth around trees.
- Don't irrigate until the soil is fairly dry. (Squeeze a handful of soil. If it will not form a ball, it's probably too dry. Sandy soils are an exception - they will crumble even when wet.)

To prevent runoff and insure that all the water applied stays in the root zone, make a basin under each tree. This should be four to six inches deep, with a good ridge of soil at the outer edge. If you have an adequate supply of water, extend the basin about three feet beyond the outer edge of the tree so that all the root zone will be wetted. If water is restricted, make the basin only to the outer edge of the tree. In an extreme water shortage, the basin may be limited to one side of the tree.

Use a hose or sprinkler to fill the basin. If the land is not level, several small basins or furrows can be used. To help maintain water pressure and even out the demand on a water distribution system, it helps to irrigate trees at night or at other "off-peak" periods.

The amount of water to apply in a single irrigation depends on the soil's capacity to store water. In the top six feet sandy soils generally hold four to six inches of water, and loams and clay soils from six to twelve inches. - depending on how fine-textured they are. Because the roots of most fruit and nut trees are in the upper six feet, do not apply more than these amounts. Additional water will be wasted below the root zone.

Fruit Thinning

It is desirable to thin fruit when they are small so that those remaining will be of good size at harvest. If water is limited, this is essential. The easiest way is to cut one-fourth or one-third of the limbs out of the tree. This pruning is usually completed in winter, but in an emergency can be done in early spring or early summer.

When the young fruit are ½ to ¾ of an inch in diameter - usually in May - individual fruit can be picked off the tree by hand or knocked off with a padded pole (to prevent injury to the bark on the limbs). The less water available, the fewer fruit should be left on the tree after thinning. Normally, with good water supply, peaches and nectarines are left eight inches apart, plums and apricots four to five inches apart, and apples and pears are thinned so one or two fruit remain per cluster. If water is expected to be in short supply, remove even more fruit - possibly spacing them twice as far as normal.

In A Real Emergency

When water is extremely short in supply, fruit and nut trees have a better chance to survive if they are irrigated early in the season rather than late. Under these conditions, many deciduous trees can survive on two good irrigations, although they will not size fruit and may produce only a limited number of flower buds for the next year. If the trees run out of water, they will go into a semi-dormant condition for the rest of the summer. When this happens, they usually drop their leaves, exposing large limbs to the sun. To minimize sunburn, which can be very damaging to trees, paint the upper side of the limbs with white water base paint to reflect the heat.

Of all common fruit and nut trees, almonds, figs and olives are the most tolerant to drought. Apples, apricots, cherries, pears, prunes and walnuts are moderately tolerant, and nectarines, peaches and citrus are least tolerant.

Other Water Conservation Measures Homeowners Can Use

- Mulches on the soil can prevent weed growth and minimize surface evaporation. Grass clippings, shredded bark and plastic sheets can be used as mulches.
- Heavy pruning and crop removal in June can sometimes reduce water loss slightly, but if done too early, will result in extra shoot growth which will increase water use.
- Irrigating only after a slight wilt shows in the leaves in the afternoon will guarantee that the soil is dry, so no unnecessary irrigations are put on. But this can result in small-sized fruit unless the trees have been heavily thinned.

JAMES BEUTEL is the Extension Pomologist at UC, Davis.

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NINE WATER MANAGEMENT TIPS FOR YOUR LANDSCAPE

1. USE A MULTIPLE PROGRAM AUTOMATIC SPRINKLER CONTROLLER. With a multiple program, different areas can be irrigated on separate schedules. Multiple programming is particularly useful for a system that waters both lawn and shrub areas.

2. AVOID RUNOFF BY WATERING CORRECTLY. Water between the hours of 10 pm to 6 am, when winds and evaporation are lowest. With clayish soils, you may need to water in several short repeat cycles to saturate the roots and still avoid runoff. Do not confuse this method with the bad practice of frequent or even daily light waterings; instead, irrigate infrequently but deeply.

3. USE MATCHED PRECIPITATION RATE, LOW GALLONAGE SPRINKLER HEADS. When sprinkler heads are not matched, the result is uneven coverage and runoff. The matched-head system will provide less flow to selected sprinkler heads in order to ensure proper spray coverage. Consult with irrigation supply professionals to obtain quality equipment that is suited to the design of your system.

4. CONSIDER INSTALLING CHECK VALVES IF THERE ARE ELEVATION CHANGES IN YOUR LANDSCAPE. After a sprinkler system without check valves is shut off, water remaining in the pipes will flow to the lowest-elevation sprinkler head and leak out. Pressure-sensitive valves will keep the heads closed and retain the water in the pipes until it is turned on again.

5. ADD A RAIN SWITCH TO YOUR CONTROLLER TO CUT OFF TIMED SYSTEMS WHEN THE WEATHER DOES THE WATERING. For less than $100, a rain cup can be added to your timed system. When natural precipitation fills the cup, it cuts off the usual timing cycle, preventing the wasteful sight of sprinklers running during a rainstorm. More sophisticated soil moisture sensors can be linked to control systems to activate irrigation as needed.

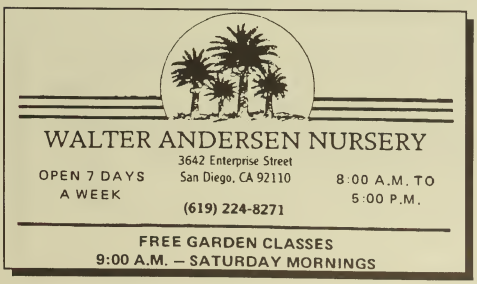
Opuntia basilaris

6. INSTALL A DRIP IRRIGATION SYSTEM FOR SHRUBS, TREES AND ORNAMENTALS. Emitters on the irrigation line can be regulated to discharge the proper amount of water at each location. Remember to check each emitter after an irrigation cycle at least weekly; they can become clogged with dirt.

7. HELP YOUR LAWN BREATHE AND RETAIN WATER. Aerate, particularly on slopes, to increase water and oxygen absorption. Use soil penetrants to reduce compaction. Thatch (dead stems and roots) should be removed. For new lawns, polymers can be worked into the soil that absorb water and slowly release it to irrigate roots.

8. CONDITION YOUR LAWN TO USE LESS WATER. Go easy on fertilizing with nitrogen; build up drought tolerance with potassiums. Increase the height of the lawn-mowing cut to expand the root system. Leave clippings after the cut to help the lawn retain moisture. For shrubs, use mulch to retain moisture at the base of the plant and prune properly to reduce transpiration (loss of water vapor through the leaves.

9. UTILIZE A PROFESSIONAL LANDSCAPE CONTRACTOR OR ARCHITECT TO CREATE A TOTAL WATER MANAGEMENT PLAN. A professional will install quality materials and set up an irrigation design and system that will save water and maintain a healthy garden for your home.



EXPLORE NEW TERRITORY

BUS TRIP - JUNE 14

WE HAVE PLANNED A DISCOVERY DAY to two gardens never before visited by San Diego Floral Association. The recently opened Nixon Library and Birthplace in Yorba Linda has been embellished with an impressive series of gardens: A First Lady's Garden is a tribute to Pat Nixon while the birthplace Garden is of cottage style and geared to use a minimum of water. There is also a Formal Garden and a Citrus Garden. Each area was designed by a noted horticultural Architect and should be of special interest to flower enthusiasts.

Naturally the library has special exhibits, the formal gowns worn by the first family ladies will be a brand new display. The wedding gowns of the Nixon daughters as well as the inaugural ball gowns should be eye-catchers.

The other garden is the 25 acres of nearby Fullerton Arboretum. A guide will walk us from the small waterfall, along the stream, to an evergreen area with a duck pond and an outstanding conifer forest. There is also a cycad collection, a bamboo planting, a ficus grove, a palm garden and dry area - where again water conservation is stressed.

Wear comfortable shoes, bring a hat/sunglasses because you can also explore the citrus/avocado trees as well as the roses, rare fruit orchard, native plants and desert display. This facility has it all. Your lunch is included in the price of $30. Non-members please pay $33. Basic pickup at Balboa park at 7:45 am. Additional pickups at Red Lobster in La Mesa, La Jolla and Hadley's per request. Return by 6:30 - traffic permitting.

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MEMBERSHIP

A WORD ABOUT MEMBERSHIP in the San Diego Floral Association. There has been some confusion lately about the designation of "member" on our trip application blank. A member is that special, valued person or family who has paid SDFA their annual dues of $10. Our members receive five newsletters a year as well as a subscription to **California Garden,** our unique magazine published since 1909.

However, many people merely subscribe to the magazine (price $7 per year, $13 for 2 years). There are also people who receive **California Garden** because they belong to an organization - usually a garden club - which provides the magazine to their membership. Consequently the recipient is not a SDFA member, but a member of another organization.

Please be aware of this situation and send the proper fee with your trip application.

To end the dilemma, you might consider joining SDFA. Your annual dues of $10 entitles you to a $3 discount on all trips as well as reduced fees for our many classes in flower arranging, basketry and our membership dinners. You'll still receive the magazine as well as the newsletters with advance announcements about trips and other activities.

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CELEBRATING CALIFORNIA'S "YEAR OF THE OAKS"

by Cathy May

THE WILDLANDS OF TROPICAL AMERICA and indigenous cultures residing from the Northern Plains to the extremes of Chile, hold much of the remaining diversity of useful plants native to the Western hemisphere, and perhaps to our planet. And yet, there have been few activities which have brought together those who are interested in sustaining traditional, locally-adapted fauna with those concerned about the accelerated loss of wild biodiversity, in the rain forests or here in El Cajon. Even when conferences have addressed such problems from a global perspective, they seldom focus on those involved with local community actions.

Here at Cuyamaca College, tree appreciation, conservation, knowledge and scientific tree-care are closely associated with the yearly celebration of trees in a practical way...Arbor Day! We join together to plant trees! Last year we dedicated a new Oak Grove on campus (Cuyamaca College) to honor the Bicentennial of the U.S. Constitution. This year we expanded the Oak Grove that can be seen along the east college entrance roadway.

California's Arbor day is observed on march 7th of each year and we encourage participation of Arbor Day celebrations through our "Sponsor-A-Tree" program on campus. We plant and tag a tree in your name or a name of your choice as a living memorial to friends and loved ones.

The native California Oak trees will help replace the rapidly disappearing native habitant of the area. The loss of trees gives us reason to pause and consider how much our lives, communities and global environments are enriched by trees. Arbor Day honors all trees, those of economic, aesthetic and environmental importance.

The last Arbor Day was beautiful!!! The warm sun was shining, green balloons were flying and banners were waving while students, families, friends, faculty and staff members joined together to plant Oak trees.

We wish to thank all of you who joined us on that beautiful day or who sponsored one of our trees that we planted for you.

GARDENER'S CHECKLIST

REMEMBER MOM ON MOTHER'S DAY with a special gift — a living plant. Try a dwarf citrus tree, chrysanthemum, rhododendron or a planter full of annuals.

REMOVE THE STEM AND LEAVES of bulb flowers AFTER they have completely died back; you'll rob the bulb of food if you do it any sooner.

PRUNE SPRING-FLOWERING shrubs after they've completed their blooming cycle.

MAY IS IDEAL FOR SEEDING lawns of Bermuda grass and dichondra.

DIVIDE CROWDED CLUMPS OF bearded iris after the bloom is finished. This should be done every third year or so.

IF YOU HAVE BEDDING PLANTS waiting to be transplanted into the garden, remember to keep them watered.

GARDEN-FRESH HERBS CAN ADD more flavor to your outdoor barbecuing. Plant them in pots near the barbecue area to have them close at hand while cooking.

SHALLOW-ROOTED PLANTS LIKE camellias, rhododendrons, azaleas and fuchsias will benefit from a thick application of mulch to conserve moisture and keep roots cool.

YOU CAN STILL SOW SEEDS OR set out vegetable plants that have already been started: tomatoes, beans, carrots, radishes, cucumbers and summer squash.

DO NOT DO ANY HEAVY PRUNING during hot weather because it sends the plant into shock. Just pinch out the tip growth or thin them lightly to promote growth and more blooms.

TRY APPLYING AN ACID PLANT FOOD first if the leaves on camellias and azaleas are yellowing; if that doesn't do the trick, add iron compounds.

START ANOTHER PLANTING OF GLADIOLUS no. Since late glads are more susceptible to thrips than early ones, dust the corms with insecticide before planting and then spray once or twice after the tops have reached six or seven inches above the ground.

INSTALL DRIP OR OTHER WATER-CONSERVING irrigation system. Slow drip and deep-root watering systems can save up to 60 percent of all water used in garden care.

FERTILIZE CACTI AND SUCCULENTS for growth and flowering. Allow the winter growers to go dormant and rest until next growing season before feeding them.

ON BROMELIADS, CUT OFF SHOOTS (when they are one-third to one-half the size of the mother plant) during warm weather for faster and healthier growth.

RIDDLE OF THE WHITE-LINED SPHINX

by Gloria Iris Glasser

"...The scent of the (buddleia's) clusters - vanilla and lilac, somewhat sickly - rouses the sphinx-moths, before their time...When the time comes for us to dine...the sphinx -moths, with large eyes that shine red from (the lam's) reflection, fall pell mell into the open baskets of peaches and figs...I hold out to them a hand sprinkled with vin rose pleasing to these deep drinkers..." translated from Colette's Journal de Rebours by Roger Senhouse.

FOR THE SECOND TIME IN FOUR YEARS a white-lined sphinx has visited our garden located in the coastal sage scrub/chaparral belt of the Santa Monica Mountains. It appeared in the early evening, large enough to startle one in the trickily indistinct light of dusk into guesses it might be a bat or a hummingbird equipped with a muffler. Where the hummingbird is sudden and strident in its flight, the sphinx is sudden but soft, soft as only a moth — even a large one — can be.

Previous encounters with non-butterfly members of the order *Lepidoptera* had been limited to observing rather doltish, hideous-faced and dun-colored furry creatures beating at the curtainless window of my foyer after dark, or extricating their dusty burnt remains from ceiling light fixtures.

The white-lined sphinx, however, could be a handsome antique brooch come to life. A bold white "grid" outlines its veins on each strong, inch-long wing, laid over warm shades of earth brown, milk chocolate and buff with a band of pale pink rippling across its black hind wings. And: protuberant coppery disks for eyes; antennae like two strips of braided gold cord; and a back feathered in fur as soft and dappled as a fawn's. There are more gorgeously colorful and ornamented species than the white-lined sphinx (*Hyles lineata,* also called the striped morning moth), but none has yet selected our garden for a visit.

A member of the *Sphingidae* family, whose moths are notable for their long proboscis (a retractable straw-like feeding tube uncoiled during nectar intake) and powerful flying ability, the white-lined sphinx is reputed to be the most common and widespread sphingid in California. According to various entomologists it is plentiful in cities and occurs some years in such numbers in the larval stage (especially in the desert) that highways become "slick with their crushed bodies" as legions of caterpillars migrate to new sources of vegetation to munch. Although most members of the *Sphingidae* bear common names attesting to the favored food of the caterpillars (e.g., the tomato sphinx moth (*Manduca quinquemaculata*) metamorphoses from the notorious tomato hornworm caterpillar, the white-lined sphinx's caterpillars have a reputation for not being particularly fussy or specialized about their menu. As such their caterpillars are not considered a major pest except when populations are explosive.

Since our garden has yet to be invaded by the sphinx's offspring — whose tendency to carry forward segments of their bodies erect or upraised when threatened suggests a rather grotesque resemblance to the Egyptian sphinx — it would seem that this particular sphingid truly is a fly-by-night guest, unexpected but welcome. And therein lies the riddle of the sphinx moth; the infrequency and specificity of the occasions it has materialized out of nowhere to enliven twilight, a time of day sometimes mired in rumination and somnolence. Its appearances have coincided with the balmiest of nights - personally my favorite kind of night, which is why the sphinx and I have crossed paths. "True" summer nights in the Santa Monica Mountains are rare, usually helped along by the advent of a mild "Santa Ana" condition that produces a comfortable swirl-and-sigh breeze and air as soft as a moth's wings.

The first white-lined sphinx visited on an August evening, darting and whirring like a ghostly hummingbird above a mixed bed of petunias, portulacas and other summer annuals. Not knowing then what it was or whether something that whirred quite so emphatically might not bear a stinging mechanism to ward off perceived predators, I studied the noisy, flitting specter from a distance, wary yet mesmerized. Sensing that I was neither bird, lizard, bat nor other enemy, the moth confidently monopolized the flower patch.

Two years later, during a phenomenal heat wave in late march when temperatures climbed to 106 degrees and evenings barely cooled to somewhere in the eighties, the second white-lined sphinx appeared. Soundless, the visitor seemed attracted exclusively to a flowering ivy geranium. The surge of intense heat had caused the plant to smother itself in descending tiers of crimson-veined lilac blooms. Trying to distinguish the moth's markings in the dim light, I hovered over it much the

way it hovered hummingbird-fashion over the geranium's frothy pyramid of flowers, lassoing nectar through its proboscis. For several seconds at a time we remained nose-tip to wing-tip, the moth oblivious to me, unconcerned or too preoccupied. Then the sphinx would make a sudden boomeranging flight around the geranium, returning where it had left off — or close to it. Like many other members of the order *pidoptera* (from the Greek word *lepis,* "scale" and *pteron*, "wing") the white-lined sphinx lacks hearing organs. Through its extremely sensitive antennae it picks up the scent of flowers as well as vibrations. Almost nuzzling its large, speed-blurred wing in my curiosity, perhaps I finally got a bit too close for the sphinx's comfort.

A sphinx moth's wings reportedly beat between 25 to 30 times a second as it hovers. It must beat its wings rapidly when initiating flight to raise its body temperature enough to warm its muscles to the task of flying. The higher the night air temperature, however, the easier it is for the moth to accomplish its necessary warmup — perhaps answering the riddle: Why is so "common" a moth so seldom seen in the Santa Monica Mountains? Because nights are traditionally cool even in summer.

Another plausible explanation is the species ability to remain as a pupa underground for long periods of time. Sealed inside a large, hard brown encasement during the final phase of metamorphosis, the pupae of the white-lined sphinx are able to withstand winter and drought until the arrival of beneficial weather, when the adult moths will emerge. In Southern California especially, the abundant aridity and abbreviated or concentrated rainfall (mostly November through March in a "wet" year) would recommend such instinctively cautionary behavior. There is no reflorescence in the native landscape after the winter's complement of rain. So her propensity for a cultivated — i.e., watered - garden probably brought a female sphinx to our flower beds where, using the sense organs in her feet to identify by texture those plants the larvae will find succulent, she lay her eggs. Future generations of white-lined sphinxes slumbered beneath my feet for months, even years, waiting on the two rare balmy evenings when our lives would briefly overlap.

GLORIA IRIS GLASSER writes articles on horticulture and native wildflowers.

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Swindells, Phillip & Mason, David
THE COMPLETE BOOK OF THE WATER GARDEN
The Overlook press, 1990, 280 pages, 10" x 7¾", hardcover, $27.50

Whether water pools, fountains, waterfalls or ponds, water feature can add a delightful new dimension to a garden setting if they are appropriate to the setting, properly designed and constructed.

Part I discusses the history of water gardens and has detailed instructions on setting, design and construction.

Part II explains how to plant in water, introduce fish, maintain pool, fish and plants summer and winter, propagate plants and solve pond problems.

Part III, the Encyclopedia of Plants, includes water lilies, deep water aquatics, marginal plants, submerged aquatics, floating plants and bog garden plants. The Appendices specify flower/foliage, season (mostly summer) and depth of planting in water.

The excellent use of diagrams and color photographs makes this book a valuable tool for anyone interested in garden water features.

* * *

Edited by Barry Williams and Ian Hodgson
GROWING BROMELIADS
Christopher Helms Publishers, 1990, 150 pages, 9½" x 6¼", hardcover, $24.95 plus $3.00 shipping and handling.

There are about 2000 species of bromeliads; the most commonly known being the pineapple which was discovered by Columbus in the West Indies.

Bromeliads have bee sub-divided into three sub-families: Pitcairnioideae, Tillandsiodeae (which are epiphytes), and Bromelioidaea, and genera of these sub-families. The sub-families are discussed in detail.

Gardeners will find Growing Bromeliads of great interest, especially the biology of Bromeliads, growing and propagating them. Colorful plates show the many characteristics which make Bromeliads so popular today in homes and greenhouses.

* * *

Ewart, Ron
THE FUCHSIA GROWER'S HANDBOOK
Blandford Press, 1989, 120 pages, 9" x 5¾", hardcover, $16.95.

Temperate climate gardeners have long enjoyed growing fuchsias in the garden. This compact book is of particular help to cold climate gardeners with the month-to-month guide and the greenhouse-to-coldframes-to-garden cycle.

For everyone there is lots of good advice on how to propagate, compost and fertilize, pests and diseases, and how to grow fuchsias in the landscape at home, whether in tubs, windowboxes or ledges.

* * *

Photographs by Jane Gottlieb
GARDEN TALES - CLASSIC STORIES FROM FAVORITE WRITERS
Viking Penguin, 1990, 102 pages, 7¼" x 8¼", hardcover, $12.95.

Garden Tales is a superb collection of short stories illustrated with beautiful photographs by Jane Gottlieb.

"The garden party" by Katherine Mansfield, "A Curtain of Green" by Eudora Welty, "The Chrysanthemum" by John Steinbeck and "Rappaccini's Daughter" by Nathaniel Hawthorne have three common threads. They all have a garden theme. They are all studies of a particular traits of human nature or weakness (sensitivity, compulsive behavior and loneliness, vulnerability and betrayal, power and manipulation). They are all written by masters of the art of writing short stories.

* * *

Hagy, Fred
THE PRACTICAL - GARDEN OF EDEN - BEAUTIFUL LANDSCAPING WITH FRUITS AND VEGETABLES
The Overlook Press, 1990 280 pages, 11½" x 9", hardcover, $35.00.

In these days when parts of the country are deep in drought, the concept of edible landscaping is practical. To become inspired with using edible plants, one should study this enlightening book by Fred Hagy. It is attractively illustrated.

Do you know the best scale to use for plotting your lot on paper, or how to determine the amount of sun exposure or thirty-five guidelines to use for determining the priorities and uses of your lot? These are just a few examples of what all gardeners need to know.

Start with the basics in Making a Beginning, Putting the Plan Together, Giving the Arrangement Final Form, an Idea Sketchbook, Choosing the Individual Plants and Taking Care of the Plants. Eleven appendices have a veritable wealth of information.

* * *

Trehane, David
A PLANTSMAN'S GUIDE TO CAMELLIAS
Sterling Publishing Co., Inc., 1990, 124 pages, 9½" x 7", hardcover.

Although the book is written for the English gardener, one is able to adapt information for use in other countries.

Most of the varieties mentioned are suitable and available in England. However, the basic facts and the author's expertise in growing Camellias and using them in the garden make this book worthwhile reading.

* * *

Sampson, Isabelle & Remy
THE CREATIVE ART OF BONSAI
Sterling Publishing Co., Inc., 1991, 168 pages, 8⅜" x 10⅞", softcover, $17.95.

Although it is fairly common knowledge that "Bonsai" translates to mean "a miniature tree on a tray," most gardeners may not recognize the various styles of bonsai and which plants are appropriate for those styles. This excellent book summarizes the most important points to know about creating a bonsai.

Learn about methods of propagation, how to control growth, special techniques, pests and diseases and what tools are needed.

What makes this book effective is the selection of suitable plant material. There are more than 60 choices in four categories: Outdoor bonsai (conifers), Deciduous Trees, Flowering and Fruit Trees and Indoor Bonsai. For each choice there are color photographs and advice on how to care for it, but especially important are the illustrations at the bottom of each page showing which styles of Bonsai can be used.

Anyone interested in Bonsai will find The Creative Art of Bonsai a valuable resource.

* * *

Toogood, Alan
ROSES IN GARDENS
Sterling Publishing Co., Inc., 1990, 80 pages, 8¼" x 8¾", softcover, 8.95.

Unlike the purist approach whereby roses are planted in straight-lined beds by themselves according to variety and color, the author provides examples on how to combine roses with other plant material.

There are all sorts of ideas on roses to use in modern gardens, in patios and containers, mixed borders, in cottage and country gardens and which ground covers are suitable underneath roses.

The lovely color photographs are an added incentive to consider reading and using Roses in Gardens.

* * *

Moran, Barbara, Editor
SPECIAL SPECIES, AN ANTHOLOGY WRITTEN BY AND FOR THE CHILDREN OF SAN DIEGO COUNTY
San Diego Sierra Club, 1991, 210 pages, 8" x 10", softcover, $4.95 plus shipping and tax.

When you hear someone say "how can anyone worry about plants at a time like this; we are at war!" - advise them to consider the Dehesa Nolina.

"The Dehesa Nolina is important like every other plant because it takes in carbon dioxide and breathes out good air." *Jared Churchill, Third Grade, Dehesa Elementary School.*

The quote is from a new book SPECIAL SPECIES, which is dedicated to "the children, animals and plants of San Diego County, and to their right to co-exist." It is interesting to note that half od the projects chosen by the children concerned plants. One small student explained "I like plants because they are the houses of the animals."

In the preface Editor Moran writes: "It is our hope that this first collection of essays will inspire a tradition of research, exploration and public interest on the part of local school children, teachers, administrators and parents . . . Let's hope the plants and animals these children 'adopted' for this - the premier anthology - will still be around when they grow up. Let's do what we can to insure it."

Isn't it time that we pool our considerable plant strength here in San Diego toward doing "what we can to insure it?" Perhaps a start would be to offer support for the plant center proposed for the old Navy Hospital site in Balboa Park.

Book review by EDALEE HARWELL

* * *

Freeman, Sally
HERBS FOR ALL SEASONS
Pengwin, USA, 1991, 256 pages, 7" x 9", softcover, $9.95 plus shipping and tax.

Readers who are interested in herb lore, herb history and the ancient use of herbs will find this book rewarding.

The author must have done extensive research in herb background, and has condensed a great deal of material into a normal-size book. Information about every familiar herb (and even unfamiliar herb) is covered, but often very briefly.

This is not a book to enjoy reading again and again. If you wan to know how to plant a herb garden and use your herbs everyday, this is not for you.

However if you are wanting a study of herbs in general (and in particular medicinal herbs), then this book should appeal to you. There is the most complete listing of herbs by their botanical names that I have seen and an extensive index and cross reference makes "Herbs for All Seasons" a valuable addition to your reference shelf. I would recommend it as a quick reference book to be used in the same way you would use an encyclopedia or dictionary, but more interesting.

Book review by MARTHA ROSENBERG

California GARDEN Since 1909

NOW IS THE TIME...

A CULTURAL CALENDAR OF CARE FROM OUR AFFILIATES

Compiled by Penny Bunker

AFRICAN VIOLETS

Helen LaGamma

TAKE the time to groom your violets by removing the lower row of leaves and all flower stems.
REPOT only if necessary.
PUT all plants on wicks using 3½ to 4 cup reservoir.
SEE that you have proper soil; light, porous, and good drainage.
HAVE 12 to 14 hours of light daily.
HAVE proper spacing - provide room for good air circulation.
WATER only when soil is dry.
USE good fertilizer according to the instructions at each watering.

* * *

BEGONIAS

Margaret Lee

CONTINUE repotting.
TAKE cuttings for extra plants.
KEEP damp but not wet.
PROTECT from too much sun.
SPRAY for pests and disease control if necessary - use a malathion-base spray.
CONTINUE a balanced feeding program; use ¼ strength once a week.

* * *

BONSAI

Dr. Herbert Markowitz

DEVELOP a watering schedule, but avoid over-watering, especially the pines.
SPRAY for insects as needed, using either a systemic or mild surface insecticide.
PRUNE all trees to promote growth and shape. Tip prune junipers and pines using finger pruning instead of cutting tools, which cause brown tips.
COMPLETE the repotting of all trees that have not been repotted - except for the flowering trees that have not completed their blooming cycle. Some deciduous trees that have been in full leaf can be defoliated in June and then repotted.

BROMELIADS

Mary Siemers

PROTECT your plants from sunburn by providing filtered sunlight.
WATER when the soil is almost dry.
ESTABLISH a monthly fertilizing schedule to use during the warm months only.
USE a fertilizer that is high in acid - using only ½ strength of that recommended on the label.
REMEMBER to water your plants before fertilizing.
ALWAYS check your plants for scale. if treating scale with malathion; be sure you have the "water-based" type.
CUT the "pups" to make new plants- take them when ⅓ or ½ the size of the mother plant.

* * *

CACTUS & SUCCULENTS

Joseph Betzler

WATER plants until water flows freely through the pot. Do not allow water to remain in pot, plants should not remain wet.
FERTILIZE for growth and flowering. Allow the winter growers to go dormant, and rest before feeding.
PROTECT the plants from brilliant sun by using shade cloth.
REPOT those plants needing it; use a well draining mix, but do not overpot. A good "rule of thumb" is to allow an inch between plant and the pot.
REPOT seedlings when they have doubled or tripled in size. If they have been in the same mix for over six months, it is a good idea to repot.
CHECK your collection for any pests or disease; if so, treat at once to avoid an infestation.

* * *

CAMELLIAS

E.C. Snooks

PLANT new plants while still in bloom.
MAKE a second feeding of cottonseed meal or a commercial acid fertilizer.
REPOT plants that have grown too large for their container.
WATER well a day before feeding; never fertilize a dry plant.
MULCH plants well with redwood compost or pine needles.
PRUNE to shape and to thin out centers of plants.
CHECK for insects; when they appear spray with cygon - looper worms and aphids are the most common new growth. Mites may appear later, use an miticide at that time.

DAHLIAS

Abe Janzen

PLANT smaller varieties, and give regular care to growing plants.
DRAW soil around the plants as they grow
FEED with low-nitrogen fertilizer (4-10-10) either dry or liquid.
SPRAY weekly to guard against leaf miners, thrips or aphids.

* * *

EPIPHYLLUMS

Frank Granatowski

WATER regularly. Keep soil moist, but not wet. Use base watering, or a fine spray to avoid injury to blooms.
PROTECT foliage from hot summer sun. It is best to keep plants in filtered shade.
BAIT for slugs and snails; a few granules of Sluggets at the base of the plant has proven effective and leaves little or no residue.
REPOT cuttings and plants that have outgrown their containers.

* * *

FERNS

Ray Sodomka

REMOVE dead fronds.
PLANT spores.
USE high-nitrogen fertilizer, liquid or pellets twice a month.
SPRAY for aphids and scale if necessary.
WATER thoroughly; maintain humidity by watering surrounding areas.

* * *

FUCHSIAS

William Selby

PINCH for shape.
FERTILIZE with high phosphorous/potash fertilizer for buds and blooms.
KEEP containers clean inside and out; remove dead leaves and blooms.
WATCH for insects and treat accordingly.
TURN containers to get an even full plant - plants grow towards the light.
WATER as needed; do not overwater, but keep moist not wet.

GERANIUMS (pelargoniums)

Carol Roller

WATER thoroughly when plants become somewhat dry. Allow the excess water to drain away. Keep foliage as dry as possible.
CONTINUE feeding with a balanced fertilizer dissolved in water, using less than the recommended strength. Use often enough to keep plants growing well. Long term pellets may be used instead.
CONTINUE pest control and disease prevention, using all products according to the manufacturers' directions.
SELECTIVELY prune and pinch ivies and zonals for future blooms. Avoid cutting regals and scenteds because their flowers will be lost by pruning at this time.
MAKE cuttings from the ivy and zonal prunings.
REMOVE faded flowers and old, discolored leaves.
ROTATE pots on a regular basis in order to produce well-shaped plants.
ENJOY your plants at the height of their season.

* * *

IRIS

San Diego/Imperial County Iris Society

KEEP watering while still blooming.
KEEP Siberians damp and feed for additional growth; can use Camellia food.
FEED Japanese with Camellia food in the water in which they are grown. Give plenty of water if not grown in pools.
FEED Spurias with low-nitrogen fertilizer.
PREPARE beds for planting and transplanting tall-bearded after bloom. Work humus into soil plus some fertilizer before replanting.
ALLOW the cut surface of rhizomes to be exposed to sunlight several hours before replanting. A light dusting of soil sulphur on the wounds might be helpful.

* * *

ORCHIDS

Charles Fouquette

REPOT cattleyas - plants that have started over the edge of the pot and have new eyes or growth.
USE your divisions that have very short roots or none at all. Place your division in a plastic bag; blow up the bag, seal the top, hang it up and watch the roots grow (when they become 2" - 2½" long, plant in mix). This

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suggestion will work on Cattleyas, lolias, schomburlsiios and oncidiums; try on other types.

MAINTAIN pest control against red spider, mealybug,aaa and scale. Try using malathion or other non-petroleum base insecticide. See your local nursery.

USE metaldehyde for snail and slug control.

FEED cymbidiums a 30-10-10 fertilizer and a balanced 18-18-18 or 20-20-20 for phalaenopsis and Cattleyas and their relatives. Instead of using fertilizers at full strength every fourth watering, try 25% of normal load every watering or a similar diluted application.

PROTECT plants that are in spike or bud from sudden temperature changes.

SHADE areas that are getting too much sun.

* * *

ROSES

Brian Donn

WATER, usually once a week - depending on the weather and your soil.

CONTINUE to feed. One ounce of Epsom salt per bush applied two or three times a year often helps produce strong new canes and more vigorous growth.

CHECK for chlorosis - a pale green to yellow color in the leaves but with dark green veins. Correct this with chelated iron or iron sulfate.

CUT spent blooms to encourage new flowering growth.

SPRAY as needed for mildew which is usually a problem in the cloudy months and for insects as needed.

* * *

GREEN THUMB ITEMS

PLANT some bulbs in May for August bloom - dahlias, tigridia, gladiolus.

INVEST in blooming perennials available in June - daylilies, agapanthus, Shasta daisies, etc.

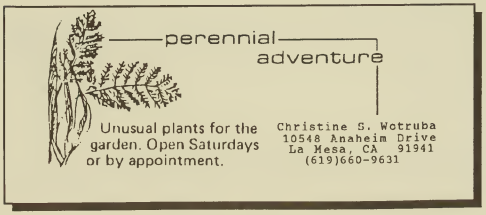
PINCH chrysanthemums for bushier plants with more buds in fall.

PLANT summer-blooming annuals - aster, calendulas, cosmos, impatiens, pansies, petunias, marigolds, snapdragons, stock, zinnias, etc.

GIVE acid feeding to hydrangeas whether blue or pink - they like acid soil to deepen the colors.

* * *

A special thank-you to Penny Bunker. Despite a broken wrist and four broken ribs, managed to get this column typed with one hand.



MAY DAY FERN BASKET

Instructor: Kathy Walsh
May 1, 9:30-2:30 p.m.
$10.50 members, $12.00 non-members

All classes will meet in the Casa del Prado in Balboa Park. Floral arranging classes will need to bring their own flowers, containers and supplies. Craft classes include all materials for a complete project but you will need to bring some basic tools. Pre-registration required for all classes as size is limited. Call Marie Walsh at 298-5812 for further information.

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Wholesale Hours:
Mon., Wed. & Fri.8 A.M. to Noon
Tue. & Thur. 8 A.M. to 5 P.M.

May 23-27 **AMERICAN IVY SOCIETY & SAN DIEGO ZOO "Animals in the Garden"**
San Diego Zoo, Balboa Park. National conference on the art of topiary & topiary exhibition. Information: 459-1235.

May 25 & 26 **BROMELIAD STUDY GROUP OF BALBOA PARK Annual Show & Sale**
Casa del Prado, Majorca Room, Balboa Park. Sat. & Sun.: 10-4:30 p.m. Free.

May 26 **SOUTH COAST BOTANIC GARDEN "Rootdirectory"**
26300 Crenshaw Boulevard, Palos Verdes Peninsula. Demonstration on computer-aided gardening. Simplifies bug identification & search for plants with specific characteristics. 2 p.m. Garden admission: $3. Call 213/544-1948.

June Weekends **SAN DIEGO NATURAL HISTORY MUSEUM** Canyoneers Outdoor Program
Free guided nature walks. Information/brochure: 232-3821.

June 1 & 2 **MIRACOSTA HORTICULTURE CLUB First Horticulture Show "Yardening"**
Student Center, MiraCosta College, One Bernard Drive, Oceanside. Exhibits & displays by local gardeners. Sat.: 1-4 p.m.; Sun.: 10-4 p.m. Free. Parking Lot J free. Call 724-3714.

June 1 & 2 **SAN DIEGO CACTUS AND SUCCULENT SOCIETY 23rd Annual Show & Sale**
Casa del Prado, Majorca Room, Balboa Park. Sat.: 1-5 p.m.; Sun.: 10-5 p.m. Free.

June 6 **THE HUNTINGTON First Thursday Garden Talk**
1151 Oxford Road, San Marino. "Daylilies for Summer Days": history, care, cultivation. Sale of ones suitable for Southern California gardens. 2:30 p.m. Free. Call 818/405-2147.

June 18-July 7 **DEL MAR FAIR Flower and Garden Show "Moos and Mums"**
From Interstate 5 take Via de la Valle west to Fairgrounds. Landscaped garden displays, floral arrangements, sales, demonstrations. Daily: 10 a.m.-10 p.m. Fair admission: $6 adults; children & seniors less. Free parking. Call 755-1161 or 296-1441.

June 16 **SOUTHWEST HEMEROCALLIS SOCIETY 18th Annual Show**
Casa del Prado, Majorca Room, Balboa Park. 1-5 p.m. Free.

June 18 *** SAN DIEGO FLORAL ASSOCIATION Quarterly Meeting & Dinner**
Casa del Prado, Majorca Room, Balboa Park. Election & installation of officers. 5:45 p.m. social hour & dinner; 7:15 p.m. meeting & program. Dinner: $4.50 members, $5.50 non-members. Information & reservations: 232-5762.

June 22 & 23 **SAN DIEGO FUCHSIA AND SHADE SOCIETY Show**
Casa del Prado, Majorca Room, Balboa Park. Sat.: 12-5 p.m.; Sun.: 10-5 p.m. Free.

June 29 & 30 **SAN DIEGO COUNTY BRANCH, NATIONAL FUCHSIA SOCIETY Show**
Casa del Prado, Majorca Room, Balboa Park. Sat. & Sun.: 10-4:30 p.m. Free.

July 7 **SAN DIEGO DAHLIA SOCIETY Specimen Show**
Casa del Prado, Majorca Room, Balboa Park. 1-4:30 p.m. Free.

July 14 **CONVAIR GARDEN CLUB 41st Annual Summer Show**
Casa del Prado, Majorca Room, Balboa Park. 1-4:30 p.m. Free.

July 20 & 21 **SAN DIEGO BROMELIAD SOCIETY 17th Annual Show**
Casa del Prado, Majorca Room, Balboa Park. Sat.: 1-4:30 p.m.; Sun.: 11-4:30 p.m. Free.

July 27 & 28 **SAN DIEGO COUNTY ORCHID SOCIETY 5th Annual Summer Show**
Casa del Prado, Majorca Room, Balboa Park. Sat.: 12-4:30 p.m.; Sun.: 10-4:30 p.m. Free.

Every Saturday **OFFSHOOT TOURS One-Hour Plant Walks in Balboa Park**
Meet in front of Botanical Lath House. Canceled for rain or less than 4 attendees. 1st Sat.: Heart of the Park Tour; 2nd Sat.: Palm Walk; 3rd Sat.: Tree Walk; 4th Sat.: Desert Walk; 5th Sat.: Sample of all four tours. 10 a.m. Free. No reservations.

Deadline for submission to HORTICULTURAL CALENDAR for June/July issue is May 15.
SAN DIEGO FLORAL ASSOCIATION is not responsible for changes in information which has been submitted by the organizations.

SAN DIEGO FLORAL ASSOCIATION, INC.

CLUB AND PROFESSIONAL AFFILIATES

ASSOCIATE CLUBS

CITY BEAUTIFUL OF SAN DIEGO
Pres: Ruth C. Smith
4995 Fanuel Street
San Diego CA 92109-2134
619/488-0830
1st Mon - 11:30 am
Rondavel Room San Diego Zoo

MIRACOSTA HORTICULTURE CLUB
Pres: Helen Odom
1253 Nordahl Road
Escondido CA 92026
619/743-1921
3rd Sat - 2:00 pm
Student Center Building
Miracosta Community College

QUAIL BOTANICAL GARDENS FOUNDATION, INC
Librarian: Druscilla Luers
P. O. Box 5
Encinitas CA 92024-0005

PROFESSIONAL WOMEN'S HORTICULTURAL AND LANDSCAPE ASSN. (PWHLA)
Pres: Carol Hopkins
1233 Pepper Tree Lane
Fallbrook CA 92028-0000
619/723-4316
4th Wed - Jan-Mar-May-Sep
1st Wed - Nov

SAN DIEGO ASSOCIATION OF PROFESSIONAL HORTICULTURISTS
Pres: Stan Rys
1233 Hayes Avenue
San Diego CA 92103-2310
619/298-9118
4th Mon - 7:30 pm
Casa del Prado Rm 104
Balboa Park

SAN DIEGO BOTANICAL GARDEN FOUNDATION
Pres: Kathie J. Van Arum
1825 "I" Avenue
National City CA 92050-5836
619/477-5258

SOUTHWESTERN JUDGES COUNCIL
Chr: Bettie Morris
1148 Canary Court
San Marcos CA 92069-4717
619/744-3435
1st Wed - 10:00 am
Casa del Prado Balboa Park

GARDEN CLUBS

BERNARDO GARDENER'S CLUB
Pres: Helen H. Andrews
12764 Via Moura
San Diego CA 92128-1245
619/485-9272
3rd Thu - 1:30 pm
Josyln Senior Center
724 N. Broadway Escondido

BONITA VALLEY GARDEN CLUB
Pres: Carol Robertson
3391 Cypress Street
National City CA 92050-7751
619/475-8487
2nd Wed - 9:30 am Coffee
10:00 am Meeting
Sep thru Jun
Rohr Park Manor Bonita

BRIDGE AND BAY GARDEN CLUB
Pres: Susanne Scribner
861 Coronado Avenue
Coronado CA 92118-2434
619/435-8088

CHULA VISTA GARDEN CLUB
Pres: Mrs. Robert Anderes
1569 Oleander Avenue
Chula Vista CA 92011-5645
619/421-9631
3rd Wed - 1:00 pm
Rohr Park Manor Bonita

CONVAIR GARDEN CLUB
Pres: Virginia Soderberg
6197 Arno Drive
San Diego CA 92120-4624
619/582-7098
1st Wed - 7:30 pm
Casa del Prado Balboa Park

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P. O. Box 118
Coronado CA 92118-0118
619/435-1723
Twice Annually
By Call of President

CROWN GARDEN CLUB
Pres: Mrs. David Sigsworth
861 Balboa
Coronado CA 92118-2424
619/435-5028
4th Thu - 9:00 am
Coronado Library Coronado

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Pres: Mrs. Don Kratzer
P. O. Box 1020
Valley Center CA 92082-7701
619/749-0337
2nd Tue - 1:00 pm
Valley Center Community
Hall Valley Center

ESCONDIDO GARDEN CLUB
Pres: Mrs. Duane Standiford
2460-9 Bear Valley Parkway
Escondido CA 92027-3512
619/745-2087
3rd Fri - 1:00 pm
Joslyn Senior Center
724 N. Broadway Escondido

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Fallbrook CA 92028-9304
619/723-9240

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7450 Via Capri
La Jolla CA 92037-2848
619/459-0496
2nd Mon - 10:30 am
Home of Members

GROSSMONT GARDEN CLUB
Pres: Betty Brending
8429 Midland Street
La Mesa CA 92042-7730
619/463-1273
2nd Mon - 9:30 am
4975 Memorial Drive La Mesa

LA JOLLA GARDEN CLUB
Pres: Mrs. Robert H. Van Kirk
7821 Boulevard Place
La Jolla CA 92037-3931
619/459-2825
3rd Tue - 1:30 pm
Sep-Jun
La Jolla Lutheran Church
7111 La Jolla Boulevard La Jolla

LAKESIDE GARDEN CLUB
Pres: Donna Swink
11351 Eucalyptus Hills Drive
Lakeside CA 92040-1208
619/443-4176
3rd Mon - 7:30 pm
Lakeside Recreation Center
12219 Roberts Way Lakeside

LAS JARDINERAS
Pres: Mrs. Donald Giddings
2234 Caminito Preciosa Sur
La Jolla CA 92037-3337
619/270-1847
3rd Mon - 10:30 am
Home of Members

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Pres: Mrs. Wayne F. Dyer
13171 St. Andrews Drive #154L
Seal Beach CA 90740-3446
213/596-4161

ORGANIC GARDEN CLUBSAN DIEGO
Pres: John Miller
10836 Calle Verde Drive #153
La Mesa CA 92041-8308
619/660-9756
3rd Fri - 7:30 pm
Jan-Mar-May-Jul-Sep-Nov
Casa del Prado Balboa Park

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Pres: Michiko Munda
1544 Oliver Avenue
San Diego CA 92109-5321
619/272-9727
2nd Mon - 1:00 pm
Sep thru Jun
Recreation Center
Pacific Beach

POINT LOMA GARDEN CLUB
Pres: Ellen E. Kuhns
875 Albion Street
San Diego CA 92106-2933
619/222-2765
2nd Wed - 10:00 am
Sep-Jun 3598 Talbot
Westminister Presby Church

PALOMAR DISTRICT CALIFORNIA GARDEN CLUBS, INC.
Dir: Mrs. John H. Lewis
11330 Vista La Cuesta Drive
San Diego CA 92131-1914
619/566-5727

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Pres: Brenda Robinson
P. O. Box 27
Poway CA 92064
619/748-1978
2nd Wed - 9:00 am
Lake Poway Pavilion

RANCHO SANTA FE GARDEN CLUB
Pres: Mrs. Phyllis Aylmer
Hort Chrm: Vera Sanjana
P. O. Box 1257
Rancho Santa Fe CA 92067-1646
2nd Tue - 7:30 pm
Rancho Santa Fe Garden Club
Avenida de Acacias

SAN CARLOS GARDEN CLUB
Pres: Jane Combs
625 Tyrone
El Cajon CA 92020-0000
4th Tue - 9:30 am
Home of Members

SAN DIEGUITO GARDEN CLUB
Pres: Mrs. Hans Kaspar
5321 Spencer Lane
Carlsbad CA 92008-7117
619/753-4087
1st Wed
9:30 am - Refreshments
10:00 am Meeting
Quail Botanical Gardens

THE VILLAGE GARDEN CLUB OF LA JOLLA
Pres: Mrs. Deykes Whitney
3349 Wellesley Avenue
La Jolla CA 9212-0000
619/546-0393
4th Thu - 1:00 pm
Sep thru May
United Methodist Church

THE VISTA GARDEN CLUB
Pres: Mrs. William Winters
3030 Winters Hill
Vista CA 92084-0000
1st Fri - 12:00 pm
Vista Senior Service Center
222 Jefferson St. Vista

IKEBANA SCHOOLS

ICHIYO SCHOOL OF IKEBANA SAN DIEGO CHAPER
Pres: Haruko Crawford
10411 San Carlos Drive
Spring Valley CA 92078-1034
619/660-2046

IKEBANA INTERNATIONAL CHAPTER 119
Pres: Barbara E. Church
5845 Friars Road #1113
San Diego CA 92110-6004
619/298-1535
4th Wed - 10:00 am
Sep thru Jun
Casa del Prado Balboa Park

IKENOBO CHAPTER OF SAN DIEGO
Pres: Mrs. Charles Oehler
2822 Walker Drive
San Diego CA 92123-3056
619/278-5689

OHARA SCHOOL OF IKEBANA LA JOLLA CHAPTER
Pres: Mrs. Robert Fox
922 Skylark Drive
La Jolla CA 92037
619/456-0559
2nd Tues - 10:00 am
Forum Hall University Town
Center La Jolla

OHARA SCHOOL OF IKEBANA SAN DIEGO CHAPTER
Pres: Mrs. Walter Bourland
2936 Havasupai Avenue
San Diego CA 92117-1641
619/276-4667

SOGETSU SCHOOL OF IKEBANA
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2829 Flax Drive
San Diego CA 92154-2160
619/429-6198

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SAN DIEGO DAYTIME AFRICAN VIOLET SOCIETY
Pres: Betty Roberson
3612 Laredo Drive
Carlsbad CA 92008-2172
619/729-6772
2nd Mon - 1:00 pm
Christ United Methodist
Church San Diego

BALBOA PARK AFRICAN VIOLET SOCIETY
Pres: Melba Batchelor
4th Mon - 6:30 pm Dessert
7:00 pm Meeting
Casa del Prado Balboa Park

HEARTLAND AFRICAN VIOLET SOCIETY
Pres: Rosemary Lort
3760 Carol Way
Spring Valley CA 91977
619/588-0509
3rd Tue - 7:00 pm
Wells Park Center
1153 East Madison El Cajon

AROID

INTERNATIONAL AROID SOCIETY
Pres: Bruce McManus
11691 SW 93rd Street
Miami FL 33176-1009
305/271-3767

BAMBOO

AMERICAN BAMBOO SOCIETY
Pres: Mr. Gerald Bol
Box 640
Springville CA 93265-0640
209/539-2145

BEGONIA

ALFRED D. ROBINSON BRANCH AMERICAN BEGONIA SOCIETY
Pres: Mary Zemcik
4157 Catalina Place
San Diego CA 92107-2611
619/223-6439
2nd Tue - 10:30 am
Home of Members

SAN MIGUEL BRANCH AMERICAN BEGONIA SOCIETY
Pres: Toni Baker
6475 50th Streeet
San Diego CA 92120-1323
619/582-7516
Last Sat - 10:30 am
Home of Members

BONSAI

SAN DIEGO BONSAI CLUB, INC.
Pres: Everett Jones
P. O. Box 40037
San Diego CA 92104-0970
619/421-3721
2nd Sun - 11:00 Workshop
1:00 pm Meeting
Casa del Prado Balboa Park

BROMELIAD

BROMELIAD STUDY GROUP OF BALBOA PARK
Pres: Mary Siemers
4614 Constance Drive
San Diego CA 92115-3108
619/284-2813
2nd Tue - 7:30 pm
Casa del Prado Rm 104
Balboa Park San Diego

SAN DIEGO BROMELIAD SOCIETY
Pres: David Waller
10272 Black Mountain Rd. #160
San Diego CA 92126-3831
619/578-7041
1st Thu - 7:45 pm
Byzantine Catholic Church
2235 Galahad Road Serra Mesa

CAMELLIA

SAN DIEGO CAMELLIA SOCIETY
Pres: Dean Turney
631 West Pennsylvania Avenue
San Diego CA 92103-3951
619/299-5418
3rd Wed - 7:30 pm
Casa del Prado Balboa Park

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PALOMAR CACTUS AND SUCCULENT SOCIETY
Pres: Gene Eisenberg
P. O. Box 840
Escondido CA 92033-0000
619/487-1051
4th Sat - 12:45 pm
Joslyn Senior Center
724 N. Broadway Escondido

SAN DIEGO CACTUS AND SUCCULENT SOCIETY
Pres: Chuck Adams
7305 Rock Canyon Drive
San Diego CA 92126-1061
619/530-2551
2nd Sat - 1:30pm
Casa del Prado Balboa Park

DAHLIAS

AMERICAN DAHLIA SOCIETY INC.
Mem Chmn: Michael Martinolich
159 Pine Street
New Hyde Park NY 11040-2446
516/742-3898

SAN DIEGO COUNTY DAHLIA SOCIETY
Pres: Gerald Lohmann
6616 Rockglen Avenue
San Diego CA 92111-4108
619/279-5135
4th Tue - 7:30 pm
Except Jul & Dec
Casa del Prado Balboa Park

EPIPHYLLUM

SAN DIEGO EPIPHYLLUM SOCIETY
Pres: Sean Minogue
808 Ethel Place
National City CA 92050-4109
619/475-4478
2nd Wed - 7:30 pm
Casa del Prado Balboa Park

EXOTIC

EXOTIC PLANT SOCIETY
Pres: George Plaisted
6356 Delbarton
San Diego CA 92120-2618
619/583-9551
4th Tue - 7:00 pm
Wells Recreation Center
1153 E. Madison El Cajon

FERN

SAN DIEGO FERN SOCIETY
Pres: George Plaisted
6356 Delbarton Street
San Diego CA 92120-2618
619/583-9551
3rd Thu - 7:30 pm
Casa del Prado Balboa Park

FRUIT

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4991 Southcrest Avenue
San Diego CA 92110
619/276-7896

FUCHSIA & SHADE PLANTS

SAN DIEGO COUNTY BRANCH NATIONAL FUCHSIA SOCIETY
Pres: Robin Whitecotton
620 Melba #11
Encinitas CA 92024
619/942-8018
2nd Thu - 7:00 pm
Palmquist Elementary School
1999 California St. Oceanside

SAN DIEGO FUCHSIA AND SHADE PLANT SOCIETY
Pres: Bill Simpson
58 "I" Street
Chula Vista CA 92010-4924
619/422-7055
2nd Mon - 7:30 pm
Casa del Prado Balboa Park

SUN HARBOR BRANCH NATIONAL FUCHSIA SOCIETY
Pres: Robert Matlock
1333 New Chatel Drive
San Diego CA 92154-2937
619/423-0213
4th Wed - 7:00 pm.
Casa del Prado Balboa Park

GERANIUM

SAN DIEGO GERANIUM SOCIETY
Pres: Barbara Jolly
1412 Tenth Street
Imperial Beach CA 92032-3433
619/424-5659
2nd Tue - 7:30 pm
Casa del Prado Balboa Park

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R. Barry Lewis
Computer System Analyst
619/460-2136

HEMEROCALLIS

SOUTHWEST HEMEROCALLIS SOCIETY
Pres: Paul Strauss
7887 Revelle Drive
La Jolla CA 92037-3539
619/453-1998
1st Sat - 10:00 am
Feb-Apr-Jun-Sep-Nov
Quail Botanical Gardens
Encinitas

IRIS

SAN DIEGO/IMPERIAL COUNTIES IRIS SOCIETY
Pres: William Barr
12565 Cloudesley Drive
San Diego CA 92128-3527
619/451-6333

IVY

THE AMERICAN IVY SOCIETY CALIFORNIA CHAPTER
Pres: Yolanda de Silva
16005 Fellowship Road
Valinda CA 91744-1323
Local Contact:
Frances Rynearson
619/459-1235

NATIVE PLANTS

CALIFORNIA NATIVE PLANT SOCIETY SAN DIEGO CHAPTER
Pres: James Dice
6066 Portobelo Court
San Diego CA 92124-1114
619/278-0326
3rd Tue - 7:30 pm
Casa del Prado Balboa Park

LAKE HODGES NATIVE PLANT CLUB
Pres: Dorris Baur
16516 Gabarda Road
San Diego CA 92128-3021
619/487-6614
3rd Mon - 3:00 pm
16003 Turtleback Road
Rancho Bernardo

ORCHID

CYMBIDIUM SOCIETY OF AMERICA, INC.
SAN DIEGO COUNTY BRANCH
Pres: Kathy Belz
2767 High Mead Circle
Vista CA 92084-1830
619/941-0382
3rd Thu - 7:30 pm
Oct thru Jun Quail Botanical Gardens Encinitas

PALOMAR ORCHID SOCIETY
Pres: Neta Jaynes
802 McDonald Road
Fallbrook CA 92028-3540
619/728-8974
2nd Fri - 7:30 pm
Vista Senior Center
222 Jefferson St. Vista

SAN DIEGO COUNTY ORCHID SOCIETY
Pres: Dr. Bernard Roth
4477 Ampudia Street
San Diego CA 92103-4531
619/296-6437
1st Tue - 7:30 pm
Casa del Prado Balboa Park

ROSE

CALIFORNIA COASTAL ROSE SOCIETY
Pres: Steve Marvin
P. O. Box 133
Carlsbad CA 92008-0030
619/433-2454
3rd Tue - 7:00 pm
Calavera Hills Community
Center Carlsbad

EAST COUNTY ROSE SOCIETY
Pres: Sally Long
1663 Fuerte Ranch Road
El Cajon CA 92019-3730
1st Sun - 2:00 pm
Gardens of Members

SAN DIEGO ROSE SOCIETY
Pres: Dallas Runion
1627 Regulus Street
San Diego CA 92111-7129
619/279-6134
3rd Mon - 7:30 pm
Oct thru Jun
Casa del Prado Balboa Park

WATER LILY

THE WATER LILY SOCIETY
Pres: Norman Bennett
c/o Charles B. Thomas, Sec.
P. O. Box 104
Buckeystown MD 21717-0104
301/874-5373

PROFESSIONAL AFFILIATES

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1325 Borrego Valley Road
Borrego Springs CA
92004-0961
619/757-5235

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7964 High Street
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619/461-7732

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619/723-8678

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Sacramento CA 95864-5638
916/483-5977

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Jamul CA 92035-9622
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619/276-6016

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619/297-4216

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619/299-3010

SUNSHINE GARDENING SERVICE
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CASA DEL PRADO ROOM 105 SAN DIEGO CA 92101-1619
619/232-5762

MEETING

3rd Tue - Feb Apr Jun Oct
Casa Del Prado Room 101
Balboa Park San Diego

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Polly Whigham
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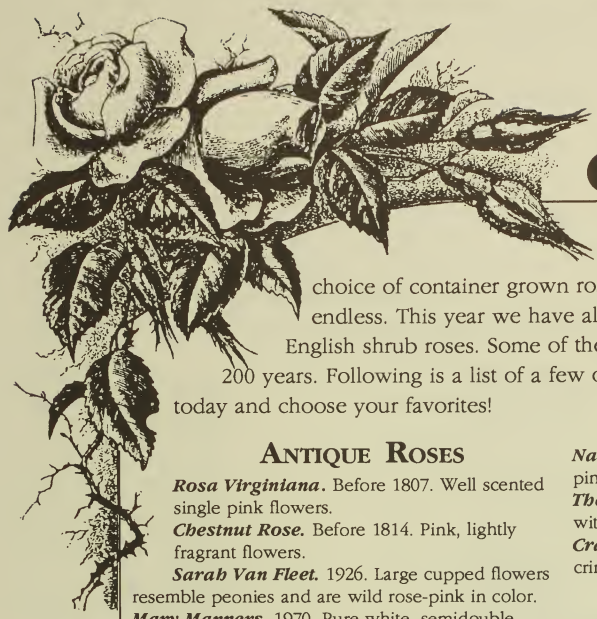
Astrophytum asterias

Opuntia bigelovii

Gymnocalycium mihanovichii and Gymnocalycium mihanovichii v. friedrichiae "hibotan"



Now Appearing at
Mission Hills Nursery

Roses Old and New!

Now is the season for roses, so the choice of container grown roses at Mission Hills Nursery is practically endless. This year we have also introduced a new line of antique and English shrub roses. Some of these varieties have been grown for over 200 years. Following is a list of a few of the varieties now available. Stop by today and choose your favorites!

Antique Roses

Rosa Virginiana. Before 1807. Well scented single pink flowers.
Chestnut Rose. Before 1814. Pink, lightly fragrant flowers.
Sarah Van Fleet. 1926. Large cupped flowers resemble peonies and are wild rose-pink in color.
Mary Manners. 1970. Pure white, semidouble flowers with rough dark green foliage.
Enchantress. 1904. Double flowers of dark rose.
Hippolyte. Double flowers of a rich purple-crimson that fades to violet with age.
Bon Silene. 1837. Double flowers of deep rose pink unfurl from the classic long pointed buds.
Little Buckaroo. 1956. Blooms constantly with small, double, starry scarlet flowers.
Champneys' Pink Cluster. 1811. Clusters of small light pink double flowers.
La Biche. 1832. Large pale flowers inclining to fawn color in the center. Fragrant.
Natchitoches Noisette. Clusters of cupped light pink flowers.
The Green Rose. Prior to 1845. Neat green flowers with sepal-like petals.
Cramoisi Superieur. 1832. Clusters of cupped crimson roses.

English Shrub Roses

Belle Story. Austin 1984. English rose, very large, well-scented. Blooms pink with slight peach color.
Gertrude Jekyell. Austin 1986. English rose. Old fashioned characteristics. Strong scent, pink color.
Graham Thomas. Austin 1983.Strong tea-scented blooms, light yellow blooms.
Ferdinand Pichard. Tanna 1921. Well scented, fully double, pink flowers stripped with crimson.
Lucetta. Austin 1983. Pink blooms fade to almost white. Fragrant. Can be used as climber.
Othello. Austin 1986. Strong scented blooms.Rich crimson truning to purple and mauve shades.

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The gardener's store

1525 Ft. Stockton St.
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7 days a week

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